

An Analysis of Consumer Demand at Oklahoma Farmers' Markets



**Shida Henneberry, Haerani Agustini, David Redhage,
Alan Ware, Doug Walton, Jason Harvey**

Henneberry and Agustini are Professor and Graduate Research Assistant, respectively, department of agricultural economics, Oklahoma State University, Redhage and Ware are Natural Resource Economist and Director of Oklahoma Produce Grant Program, respectively, the Kerr Center for Sustainable Agriculture, Doug Walton is a Producer with the Oklahoma Farmers' Market Alliance, and Jason Harvey is Market Development Coordinator with the Oklahoma Department of Agriculture, Food, and Forestry.

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Abstract

Recent concerns about food nutrition and personal health have fueled the consumption of fresh produce in the United States. With this growing demand for fresh produce comes an opportunity for farmers to increase their individual returns, specifically, through the use of direct markets. The objectives of this study are: to examine consumer preferences among various marketing channels in Oklahoma; and to analyze the impact of various demographic/consumer- characteristic variables on purchasing decisions. Specifically, this research focuses on the links between demographic factors and shopping preferences.

Data were collected from consumer surveys, which were distributed to the buyers at the farmers' markets in Tulsa, Stillwater, Norman, Shawnee, Muskogee and Oklahoma City. An ordered logistic regression analysis method was used to analyze buyer preferences. Oklahoma farmers' market producers were also surveyed through a mail questionnaire to identify their characteristics, marketing activities, and their perception of consumer characteristics that shop at Oklahoma farmers' markets. The results of this study is expected to help increase understanding of Oklahoma farmers' market participant characteristics which will be useful to policy makers designing Oklahoma's future marketing programs.

The result shows that typical Oklahoma farmers' market consumer is female, age 36 or older, highly educated, with an annual household income exceeding \$40,000, and coming from a two-adult household. Out of 312 respondents, 85 percent said they would expect the produce that they buy at

farmers' market would have a higher quality compared to produce at other markets. These findings were also supported by farmers' market's producer surveys.

Background



Recent concerns with food nutrition and health have fueled the consumption of fresh produce in the U.S. Per capita consumption of fruit and vegetables show an increasing trend in the U.S. In 1976 per capita consumption of fruit and vegetables was 623.0 lbs, increasing to 755.2 lbs in 2000 (USDA, 2001), an increase of twenty percent.

Today's consumers view fresh produce as a source of fiber and desirable nutrients. This view has increased the interest in locally grown produce in general. Moreover, the recent September 11 events have increased consumer interest in wholesome foods and foods with traceable source of origin. With the growing demand for fresh produce comes an opportunity for farmers to increase their individual returns, specifically, through the use of direct marketing outlets.

During the past years, the departments of agriculture in many states have strongly supported and helped in the promotion of farmers' markets. The Oklahoma Department of Agriculture, Food and Forestry have had a key role in the development of farmers' markets in the state. The 2000 National Farmers Market Directory lists over 2,800 farmers' markets that operate across the United States. The number had increased to over 3,100 farmers' markets in 2002. From 1994 to 2002, the number of farmers' markets increased by 79 percent in the U.S., which indicates that farmers' markets are meeting the needs of many farmers with small- to medium-sized operations. The increase in the number of farmers' market is "mostly due to the growing consumer interest in obtaining fresh products directly from the farm" (USDA, 2003).

This paper reports the results of a general survey of Oklahoma farmers' market consumers. Specifically, this paper will focus on the links between demographic factors and shopping preferences.

Objectives

- (1) To examine consumer preferences among various produce marketing channels, including direct marketing in Oklahoma.
- (2) To analyze the impact of various demographic variables on consumer purchasing decisions from Oklahoma farmers' markets.



Data Sources

Data for this study were collected using farmers' market consumer and producer's survey questionnaires, which included questions related to objectives. The surveys were conducted from April until June 2002, during the farmers' market season.

Altogether, for farmers' market consumers' survey, there were 312 useable questionnaires collected from 6 towns in Oklahoma. The distribution of the returned questionnaires was: 96 questionnaires from Muskogee, 68 from Oklahoma City, 52 from Tulsa, 45 from Stillwater, 26 from Shawnee, and 25 from Norman.

The returned usable producers survey questionnaires were 64; 9 from Muskogee, 11 from Oklahoma City, 5 from Tulsa, 11 from Stillwater, 10 from Norman, 5 from Collinsville, 1 from Creek county, 3 from Pittsburgh county, 2 from Alva County, 1 from Elk county and 1 from Bartlesville county.



Methods

1.1. Simple comparison analysis:

The Oklahoma's farmers' market consumers' characteristics were demonstrated using charts and tables summarizing the response to the survey questions. Farmers' market producer and market manager survey results were also compared.

1.2. Ordered logistic regression analysis:

The relationship between consumers' characteristics and their responses were analyzed with ordered logistic regression using the outcomes of two of the questions (question 8 and question 9) on the questionnaire as the dependent variables. Question 8 asked the respondent to identify places from which they normally obtain their produce from during the farmers' market season. Question 9 asked about the importance of various produce attributes when shopping for fresh produce.



The Models

$\text{logit}(F_{ijk}) = f\{\text{Age, Gender, Children, Education, Income, Visits}\}$

Where F_{ijk} is the cumulative probability that individual i obtain most of his/her produce from specific source (j), where j is own garden, friend's garden, farmer's market, roadside stand, grocery store, or discount super-store, and k refers to the quantity of produce obtained from each source (most, some, or none), and i is the individual being observed.

$\text{logit}(F_{ilm}) = f\{\text{Age, Gender, Children, Education, Income, Visits}\}$

where l refers to the motives behind fresh produce purchases (convenience, quality, unusual varieties, quantity choice, price, in-season, chemical residues, farming methods used, grown by the vendor, made in Oklahoma, and free of genetic modification) and m refers to how important these quality attributes are for each consumer (very important, somewhat important, or not important).

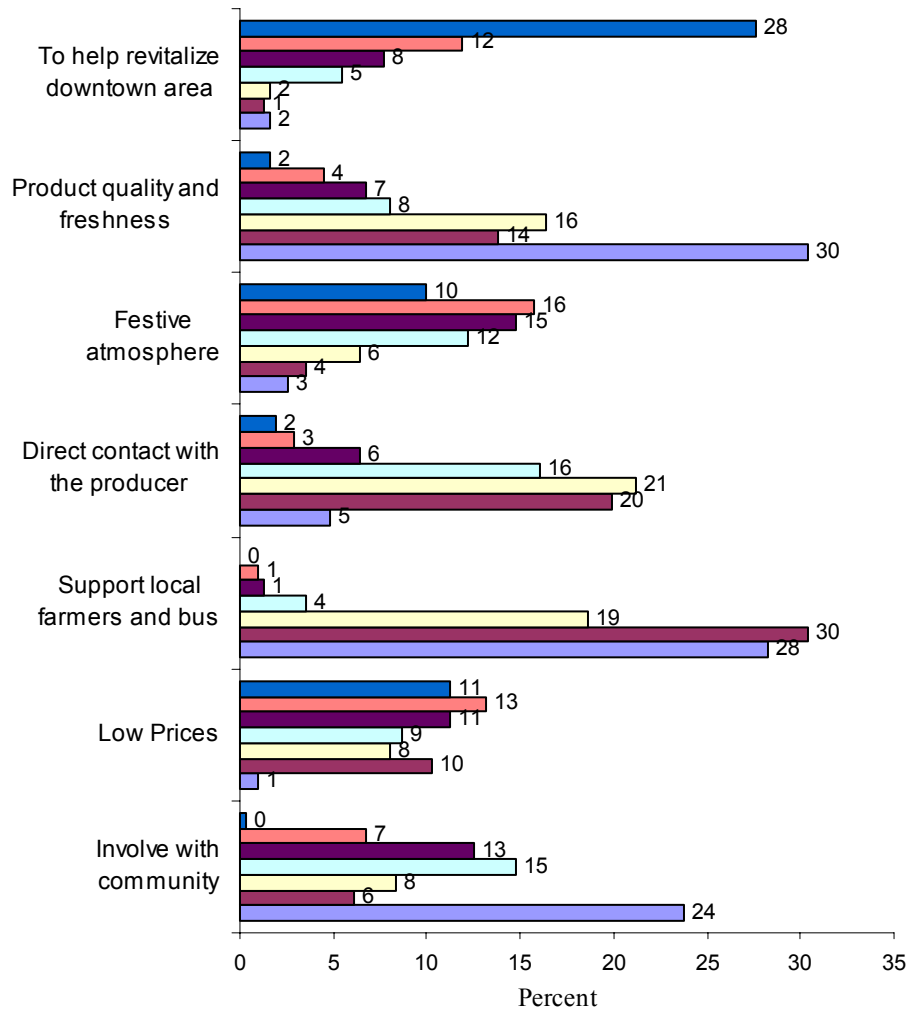
Results

Table 1. Demographic Characteristics of Oklahoma Farmers' Market Consumers and Producers

characteristic	% of consumers (N=612)	% of producers (N=64)
Gender:		
Male	21.0	33.8
Female	79.0	61.5
Age:		
< 25	0.0	0.0
26-35	6.4	6.0
36-55	27.6	50.0
51-65	40.1	21.0
66-75	13.8	15.0
>75	9.6	8.0
Education:		
Grade School	2.0	5.0
High School	16.0	15.0
Some College	30.0	27.0
Undergraduate	20.0	23.0
Some Graduate School	11.0	11.0
Masters	16.0	16.0
Doctoral	5.0	3.0
Annual Household Income:		
< \$20,000	13.0	19.0
\$20,000-\$39,999	22.0	30.0
\$40,000-\$59,999	25.0	24.0
\$60,000-\$79,999	18.0	19.0
\$80,000-\$99,999	10.0	5.0
>\$100,000	12.0	3.0
Neighborhood:		
Urban	39.0	8.0
Suburban	43.0	10.0
Rural	18.0	82.0
Ethnicity:		
African American	3.0	0.0
American Indian	7.0	2.0
Asian/ Pacific Islander	0.0	3.0
Middle Eastern	1.0	2.0
Caucasian	88.0	88.0
Hispanic	1.0	2.0
Others	0.0	3.0

Sources: Oklahoma Farmers' Market Surveys, 2002

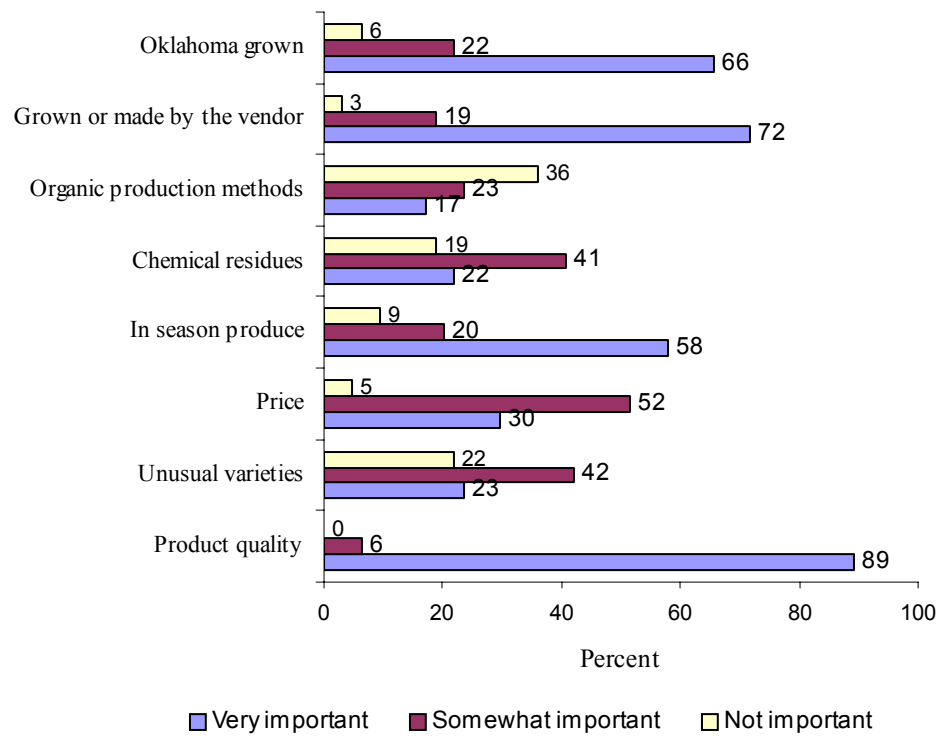
Reasons for Shopping at Farmers' Market



Rank 1 = the Most Important, Rank 7 = Least Important

Percentage of Consumer Respondents that stated a given Reason for Shopping at Oklahoma Farmers' Market

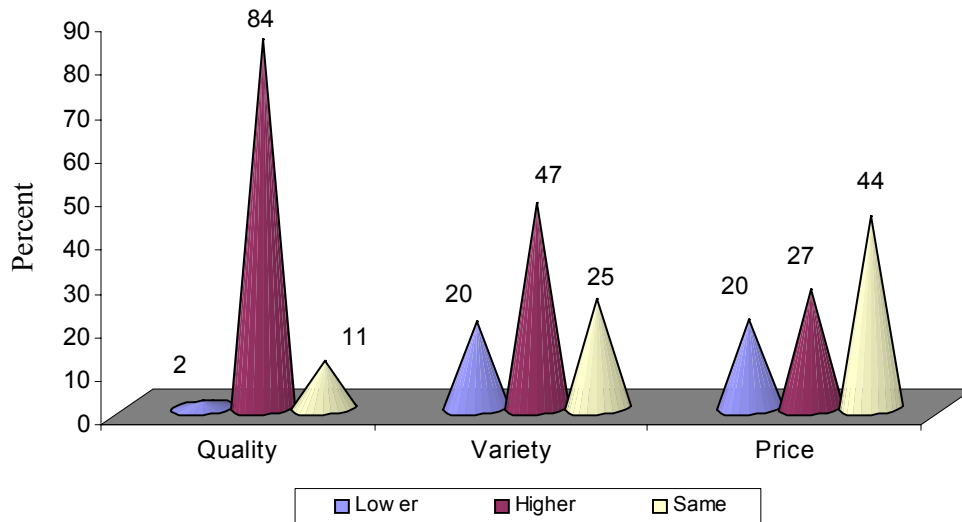
Source: Oklahoma Farmers' Market Consumers Survey, 2002



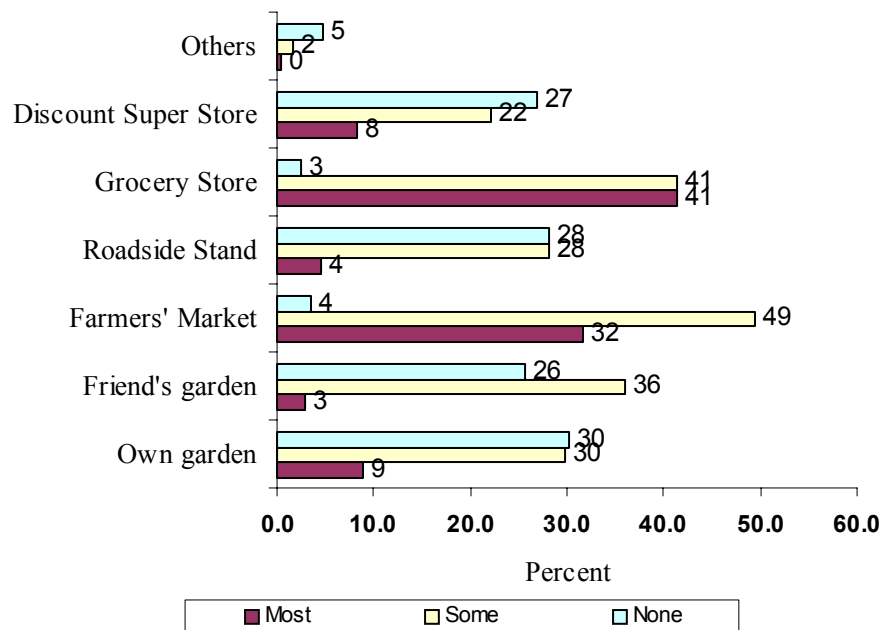
Percentage of Producer Respondents
that Stated their perception of the Importance of Quality
Characteristics to Customers

Source: Oklahoma Farmers' Market Producers Survey, 2002

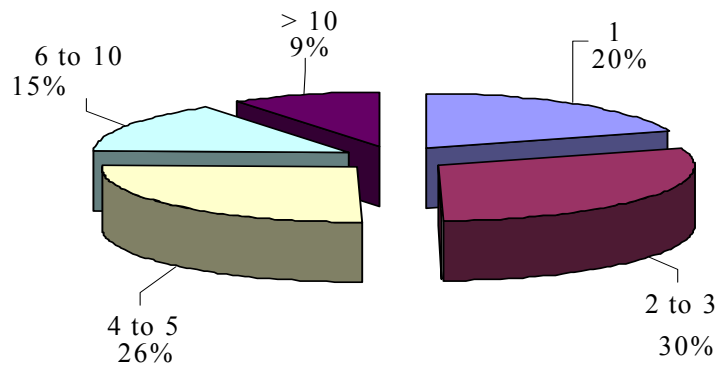
Shopping and Purchasing Patterns



Percentage of Consumer Respondents on their Expectation of Produce Characteristics at Oklahoma's Farmers' Market Compared to Elsewhere

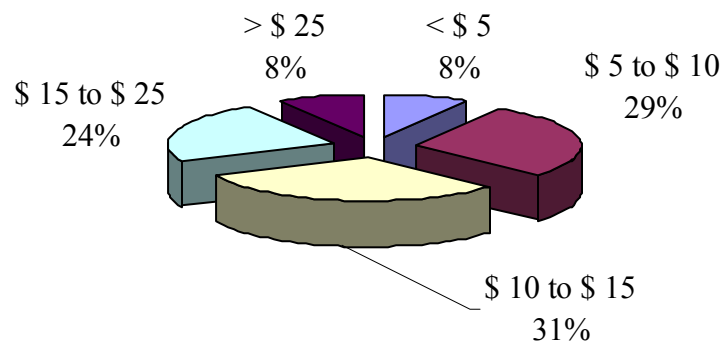


Percentage of Consumer Respondents that Indicated Places Where Normally they Obtain Portion of their Fruits and Vegetables



Percentage of Consumer Respondents by Number of Years Visited Oklahoma Farmers' Markets

Source: Oklahoma Farmers' Market Consumers Survey, 2002



Percentage of Consumer Respondents that Indicated the average amount spent on Each Visit to Farmers' Market

Source: Oklahoma Farmers' Market Consumers Survey, 2002

Ordered Logit Model Results

Age, neighborhood, education, and income were shown to be significant variables in the “farmers’ market” model in predicting the likelihood of the customers obtaining most of their fruit and vegetables from a farmers’ market; compared to from other sources, including own or friend’s garden, roadside stands, grocery stores and discount super stores. Respondents who live in urban and suburban areas are most likely to obtain most of their fruit and vegetables from a farmers’ market. The odds of respondents from urban areas in purchasing their produce from farmers’ markets are twice as the odds of respondents from rural areas, and the odds of respondents from suburban areas are 1.5 times the odds of respondents from rural areas.

Survey results indicate that quality is a very important factor to most Oklahoma farmers’ market shoppers. In this study, the estimation results from the ordered logit regression model for quality dependent variable showed ‘gender’ and ‘neighborhood where respondents reside’ are significant in predicting the likelihood that respondents value quality as ‘very important’. The results showed that male buyers are less likely to rate quality as a very important factor while shopping for produce at farmers’ market. This result was also supported by the odds ratio estimates. The odds of a male customer are 0.4 of that of a female.

Conclusions

The typical farmers' market consumer falls in the age category of **51-65 years old**, has some **college education**, and has a household annual income between **\$40,000 - \$59,999**.

Related to the consumers shopping pattern, most of the consumers came to farmers' market to buy fresh fruit and vegetables because of the expectation that the quality of fresh produce at farmers' market is higher compared produce available at other outlets.

The most important reasons given by consumers' for shopping at farmers' markets are "product quality and freshness", and to "support local farmers and businesses".

Consumers mostly came on Saturday's farmers' market and spent at least \$10.00 on each visit.

The length of time consumers have shopped at farmers' markets may give an indication of customer satisfaction. About fifty percent of the consumers have visited farmers' market for "at least 4 years", and they have visited the market "every week".

The typical Oklahoma farmers' market producer is between 46-65 years old, with an undergraduate education and has a household's annual income between \$20,000-\$39,999.

Most of the growers' primary occupation is "non-agricultural", and they have been in the farmers' market for 4.5 years

Farmers' market producers were asked to identify the characteristics of the consumers that shopped at farmers' market. The producers indicated that their perception was that most customers come from medium income households, are retired, are educated, and are very health conscience.

